

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Rec'd PCT/IPC 18 OCT 2004

PCT/EP2003/004334



Applicant's or agent's file reference B02/0092PC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/004334	International filing date (day/month/year) 25 April 2003 (25.04.2003)	Priority date (day/month/year) 26 April 2002 (26.04.2002)
International Patent Classification (IPC) or national classification and IPC C07C 43/11		
Applicant BASF AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 28 August 2003 (28.08.2003)	Date of completion of this report 04 May 2004 (04.05.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/004334

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 pages _____ 1-20 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____ 1-10 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/04334

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-9	YES
	Claims	10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations

The present application relates to alkanol alkoxylates of the formula (I), methods for the production thereof, and the use thereof as surfactants and emulsifiers.

D1: WO 94 11 330, cited in the application

D2: WO 94 11 331, cited in the application

D3: DE 42 37 178

D4: WO 01 04 183, cited in the application

D5: US 2 921 089

1. Novelty (PCT Article 33(2))

D1 describes alkoxylates of 2-propylheptanol of the formula (I), where A = propylenoxy or butylenoxy, $n = 1-6$ and $m = 1-10$, preferably $n = 1-4$ and $m = 2-8$, and the use thereof in detergent compositions for the cleaning of textiles materials. In example 1, the alkoxyalkoxylate is produced where $n = 4$ and $m = 6$. These alkoxylates are produced in the presence of NaOH, KOH, $\text{Ca}(\text{OH})_2$, $\text{Ba}(\text{OH})_2$, $\text{Sr}(\text{OH})_2$ or hydrotalcite as a catalyst.

D2 describes alkoxylates of 2-propylheptanol, where $n = 1-6$ and $m = 1-10$, preferably $n = 1-4$ and $m = 2-8$, in detergent compositions for degreasing hard surfaces (page

2, line 5 - page 3, line 5, claims 4-6). In said document, in contrast to the present application, ethylene oxide, then propylene oxide units, are located directly on the alcohol group.

D3 describes a surfactant concentrate for cleaning dishes, said concentrate containing alkoxylates, where $n = 0.5$ to 3 and $m = 4$ to 10 C_6-C_{10} alkanol.

A method for the ethoxylation of hydrofunctional starter compounds in the presence of a double-metal cyanide compound as a catalyst (DMC) is already known from the prior art (D4, claims and examples).

A method for producing 2-propylheptanol from *n*-valeraldehyde is already known from D5.

Alkoxylates of the formula (I) in claim 5 can be considered a selection invention with respect to D1. The subjects of claims 1 to 10 are therefore novel.

2. Inventive step (PCT Article 33(3))

2.1 Use (claims 1 to 4): in D2, alkoxylates are also used to degrease hard surfaces. Said document is therefore the closest prior art. The present application differs therefore from D2 in that, in the alkoxylates of the formula (I) that are used, propylene oxide or butylene oxide units and then ethylene oxide units are bonded directly to the alcohol. This difference enables, firstly, the amount of residual alcohol in the alkoxylates to be reduced, which is advantageous for reasons of smell (page 11, lines 9-19 of the description). Secondly, this difference means that the alkoxylates of the invention have improved wetting properties on hard surfaces (page

11, lines 26-31). These advantages are discussed on pages 17-20. D2 contains no suggestion that the properties could be improved by reversing the alkoxylation sequence. The subject matter of claims 1 to 4 therefore involves an inventive step.

2.2 Compound (I) and the process therefor (claims 5 to 8):

The present application relates to a selection invention of alkanol alkoxyates in which, from the broad range of 1 to 6 equivalents of propylene oxide of D1, a narrow range of 1.2-1.8 is claimed. These compounds are used in D1 in detergent compositions for cleaning textile materials (different use). The difference between the present application and D1 means that the alkoxyates as per the invention show emulsifier properties and can be used as low-foaming wetting agents for hard surfaces (page 3, lines 14-20 of the description). Consequently, the problem addressed by the present application is that of providing alkoxyates which have outstanding emulsifying and wetting properties. This problem is solved by the alkoxyates of the formula (I) through the presence of 1.2-1.8 or 1-1.8 equivalents of propylene oxide or butylene oxide (see examples). D1 gives no suggestion that specifically a proportion of propylene- or butylene oxide units in alkoxyates of the formula (I) has such emulsifying and wetting properties, since D1 is concerned with the cleaning of textiles. The subjects of claims 5 to 9 therefore involve an inventive step.

2.3 Claim 10: this claim is not restricted to the wetting of glass, polyethylene or steel, but relates to other fields of use, such as textiles, cosmetics, pharmaceuticals or plants.

The present invention relates to a selection invention of

alkanol alkoxylates in which, from the broad range of 1 to 6 equivalents of propylene oxide from D1, a narrow range of 1.2-1.8 is claimed. These compounds are used in D1 or in the present application (claim 10: "textile treatment agents") in detergent compositions for the cleaning of textile materials. The problem addressed by the present application is to provide alkanol alkoxylates having, as textile treatment agents, unexpected or surprising properties with respect to the prior art D1. Solutions to the problem are given by alkanol alkoxylates of the formula (I). In the absence of comparative test results, it is not possible to assess whether the subject matter of claim 10 meets the requirements of PCT Article 33(3). The applicant is requested to submit convincing test results and to illustrate the surprising properties of the new derivatives, or to provide arguments in any other manner as to why the application is patentable. Any such comparative tests as might be submitted should be sufficiently significant and convincing. The tests must, in addition, relate to compounds of the closest prior art (D1, example 1 (4 PO + 6 EO) with example 1 (1.5 PO + 6 EO) of the application) in order that the unexpected effect can be linked clearly to the differentiating feature n with respect to the prior art.